EEC PLAYS RUSSIAN ROULETTE

Lunchtime Monday saw negotiations grind to a halt as the USSR, the EEC and fourteen rather important articles enmeshed themselves in what seemed to be an unbreakable deadlock, that did not bode well for a Convention on the Conservation of Antarctic Marine Living Resources.

The build up had been ominous enough with the 14 key articles receiving proposed amendments from a host of participating nations, not the least of which was the EEC, which could rightly claim ownership of the majority of changes being sought. Most of these concerned its right to participate in the meetings, and the establishment of its competence over fisheries carried out by its member nations.

The preceding article by article review saw repeated interventions by the USSR stating in no uncertain terms that the key articles must not and could not be changed. The USSR stood strongly by the gentlemen's agreement that had been reached in Buenos Aires and Washington (so we are told) which would have articles 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 17, 19, 21, 22 and 28 left untouched, thereby providing the basis for the convening of the current meeting in Canberra. The USSR was unmovable, but then so was the EEC which seemed determined to entrench its position above and beyond the agreement hammered out in Washington.

It was only a matter of time, (only!), the USSR then produced its biggest stick, temporarily winding all participants - if you can amend articles, so can we. The amendments they proposed left little to the imagination but they were to the point.

Article I was to be changed to exclude whales and seals which are dealt with by other conventions, and also the birds. One wonders whether by this they mean that all whales are to be excluded - since the IWC only deals with the great whales and not at present with the orcas that the Soviet Union has been taking in the Southern Hemisphere, nor with any of the smaller cetaceans. And why exclude birds - what are the plans for penguins?

Article II would, at their hands, receive major surgery. Most of the ecosystem requirement is removed, leaving only consideration for the species associated with harvested species, and referring to the need to maintain stocks at levels enabling the maximum permitted catch to be taken, based on the fullest scientific information at their disposal. That would be a dangerous weakening of the present draft.

Article XVII would be amended to ensure that the convention should not come into force until it has been ratified by countries whose catches of Antarctic marine living resources totalled at least 300,000 tonnes. This would place control over ratification in the hands of fishing states who could either delay ratification for years, or ensure that the first meeting of the Commission was attended by a preponderance of fishing states.

The most provocative blow of all was to table an amendment which would have removed the 'bifocal approach' - a nice phrase which

Continued on back page
Will There Be Effective Systems For Enforcement And Inspection?

It is an accepted realism that any national law or international treaty is only as effective as the possibility of its enforcement. Upon implementation of the Convention (and also during the interim period before the Convention goes into effect) monitoring of vessels engaged in harvesting of Antarctic resources will be a necessity. Will there then be a truly impartial and objective system of inspection and enforcement? Now is the time to lay the groundwork for a comprehensive international inspection system.

Draft Article XXII of the Convention on the Conservation of Antarctic Marine Living Resources has serious weaknesses - specifically the lack of provision for a centralized observer and inspector network, and a requirement solely for flag state enforcement procedures.

The creation of an independent Board of Inspectors with costs apportioned equally among Commission members would provide the framework for this centralized system of inspection and observation. Additionally, regular notification to the Board of Inspectors by nations conducting research or harvesting in the Convention area should be spelled out in Article XXIII.

The principal of flag state enforcement has been much abused in other fisheries conventions. Provisions should be made for regular formal reporting by inspectors and observers to the Commission and the Scientific Committee. In addition, procedures should be developed for sanctions to be applied in the case of violations of conservation measures laid down by both the Commission and the flag state.

continued from page 3

Seabirds as an Early Warning Signal?

Any large scale harvest of krill in the southern ocean constitutes a potential threat to the stability of the fragile southern ocean ecosystem. Over-depletion of this small crustacean, which represents the “basis” in the Southern Ocean food web could have serious consequences for higher order members of the trophic scale including various species of seals, sea birds and of course, whales.

The success, both economically and environmentally, of such harvesting depends, to a large extent, on certain measures being taken to monitor the effects of that harvesting to prevent over-depletion of krill.

One method is to employ “indicator” species, in whose biology, changes in the availability of krill may be reflected in the pregnancy rates and average age at sexual maturity of the population. Therefore, observed changes in these parameters may be useful as indicators of environmental stress caused by over-harvesting.

Recent studies, however, indicate that the average age at sexual maturity of Minke whales may be between six and nine years, a problem in that changes in the ecosystem would not be reflected in the indicator species within a minimum of six years.

Furthermore, Minke whales are currently a commercially exploited species. Therefore any consideration of observed changes in the above parameters would be complicated by the effects of exploitation on those parameters.

It would seem more appropriate, then, to choose as an indicator, a species which is not commercially exploited and one that has a comparatively short generation time. A possible answer may lie in the various species of sea birds which also feed on krill.

The onset of sexual maturity and breeding is much quicker in sea birds and, thus, trends could be established over a number of generations in comparatively very short time thereby ensuring more successful prevention of ecological damage.

Secondly, no species of sea bird is at present commercially harvested in the Antarctic and thus the complications arising from the effects of harvest on the population would not be a consideration.

Similarly, since these species are not commercially exploited, there is not likely to be resistance on the part of various nations to disseminating relevant data.

Furthermore, a good data base already exists for many sea birds, eg Emperor and Adelie penguins, as a result of ongoing studies being conducted in the Antarctic region.

krill??, meal,?, fodder??, edible protein?? only to conclude finally that in spite of ten years of research on krill and its processing technology, the question remains unanswered, for all practical purposes.

It is easy to be wise after the fact, but if the necessary scientific information on krill was available before the massive F.R.G. effort started, a lot of time and money would have been saved. Clearly there is not enough information available about krill to make long term decisions. We can only hope that other nations have the wisdom to learn from the F.R.G. mistakes.
Arbitrary Krill Harvest Quotas Will Prove Critical For Whales

A lot of discussion has focused on what kind of temporary arrangements need to be made to safeguard the Antarctic krill and some of the critical species within it, in the period between the signing of this Convention and its coming into force.

The U.S.A. have proposed, in resolution, that scientific information be exchanged, as well as information on the vessels operating and the catch taken between the SCAR, SCOR, IABO and ACMRR group of specialists, during the interim period. They also suggest that the interim period be as short as possible and that any harvesting carried out in that period be in accordance with the principles of Article 2; to limit the annual catch of Antarctic krill, by nations gathered here, to 2 million tonnes.

A head count of delegations seems to indicate that none of them don't favour establishing an interim total allowable catch of krill - some because they do not feel bound by any restrictions so long as the Treaty has not come into force, some because they feel there is no real scientific justification for such a figure (which is true), and some because they feel that this figure will provide a basis for quotas when the Convention is established, which may not be a desirable thing.

Certainly in terms of saving endangered whale species, there is little or no evidence to suggest that a 2 million tonne limit overall would do the trick - simply because all catches are taken. It is interesting, however, to note that the U.S.S.R. have proposed, as an amendment to Article 26, that the Convention should come into force when the catch by ratified nations has reached 300,000 tonnes - indicating that they at least should have no practical objection to a ceiling of 2 million in the interim.

The most powerful argument for the need for interim measures is the need to save certain whale populations from potential extinction. The Blue and Humpback whales have been reduced in the Southern Oceans to such a low percentage of their former numbers that scientists are uncertain as to whether or not they will recover. If their populations drop below the "critical survival levels", they will become extinct. At present there is no evidence to show that they are recovering though they may in fact be slowly increasing in numbers. Their life cycles are long, however, and it would take decades for these two species to regain a safe level.

Any additional stress and in particular any interruption to their food supply, on these populations could be enough to exterminate them. These species come down to feed in Antarctic waters for the warmer waters north of the convergence and it is to see them through the demands of the next 5 months. In other words, they eat like gluutons half the year and slim the other half - there is virtually no feeding in warmer waters. So, any reduction on what they get down south can't be made up until the following year.

Logically therefore, the areas where these species feed should be closed to krill harvesting until such time as it can be established what reduction in their food supply if any, will not hurt their recovery. Problem: Where do they feed? In general terms this is known, but locating precise areas is much harder. Krill swarms are in slightly varying areas from year to year, and the whales go where the krill is. Certainly Blue whales feed very close to the edge. Minke whales feed in slightly different areas. One safety method proposed by the 1980 Washington Workshop is to divide krill fishing into latitudinal zones. This however would appear to require much greater knowledge than is available, and so to set aside certain latitudes as protected areas, would be hard to agree upon. It is possible to ask though that the swarms nearest the pack ice be protected, since the Blue whales are known to feed nearest that zone.

The Washington Workshop on Management of Antarctic Marine Living Organisms have looked at the degree of depletion of whale species and the other predators on krill in the area. They came to the conclusion that Area II was the most likely candidate in scientific terms for protection, because whales had been so heavily reduced in that area, and because other krill eating species are most abundant there. They have a very strong point.

Another recommendation is also being made to the meeting. In April a group of Indian Ocean nations met to discuss how to implement properly the IWC declaration last summer of a sanctuary for whales in the Indian Ocean North of 55° s. One of the recommendations that they agreed was to ask this meeting to close the Indian Ocean sector to krill taking.

This is a very logical idea on several counts. It reinforces the protective measures given to krill eating whales in that sector - that is Blue and Humpback whales, already protected by the IWC. But now in the Indian Ocean to receive guaranteed protection from most of its coastal states, who are not members of the IWC sector. It prevents any accidental reduction in the food supply of Minke whales, currently taken in considerable numbers by Japanese and Soviet vessels in this sector. At present the calculations of yield for minke whales in the Scientific Committee of the IWC do not include, because the data are not there, the possible reduction of their food supply. Since it is at present unanimously accepted that the Minke whales have been increasing as a result of greater availability of krill, the converse also holds true: reduce their food supply, and maintain present whaling levels, and you are likely to run into trouble.

It is not likely to cause any disruption of existing krill fisheries - if our information is correct, krill fishing at present is concentrated in Area II and little if any takes place in this sector.

That leaves objections from France and Australia on sovereignty grounds. It seems unlikely that France would object to closing krill fisheries in that area, since many take place within the 200 mile zones of Kerguelen and Crozet. It seems likely too that Australia would not object.

It may be argued that there is no scientific basis for closing an area but the scientific basis for closing one feeding sector is stronger than for applying an arbitrary overall catch figure which takes no account of the area requirements of certain whale species. The proposal to close the Indian Ocean sector would appear to meet the needs of the IWC's declaration of the Indian Ocean sanctuary, of the Indian Ocean countries that just met, and of whaling nations taking minke whales under IWC quotas.

It would be a safety measure, allowing certain populations of the Southern Hemisphere Blue and Humpbacks some guarantee of safety.

Fluoride in Krill...

Recently published scientific studies indicating very high levels of fluoride in krill has caused the Federal Republic of Germany (FRG) to change it's attitude towards using the shrimp-like creature for direct human consumption.

The scientific paper "Fluoride in Antarctic Krill" by T. Soevik and O.K. Bækkan of the Institute of Vitamin Research, Bergen Norway in 1979 found that krill has fluoride levels in the order of seven to 24 times higher than those permissible by the Food and Drug Administration in the U.S.A. This research has been confirmed by similar results from F.R.G. scientists, National Marine Fisheries Service.

continued on back page
LESSONS FROM THE BAY OF CAMPECHE SHOULD BE HEEDED

The greatest threat to marine life in the Antarctic is probably posed by oil drilling. The dangers inherent in this industry have recently been all too dramatically demonstrated by the blow-out which occurred in the Bay of Campeche in the Gulf of Mexico, in June 1979.

The lessons of this tragedy should be acknowledged by the members of the Convention who should work to actively avoid situations developing which could threaten the Antarctic ecosystem from oil spills and blow-outs. If the Ross Sea, a likely source is fouled up by a major blow-out, it may take years, even decades to repair the damage to the ecology, if in fact the damage is not irreparable.

For those whose memories of the Bay of Campeche disaster need refreshing a short description is set out here.

On the 3rd June, 1979, a semi-submersible drilling rig anchored off the Mexican town of Ciudad del Carmen, had just withdrawn a drill pipe from 5,200 metres well when without warning the heavy drilling mud and water, followed by natural gas and oil came gushing out in an uncontrollable flow. By daybreak, the water for hundreds of metres around the well was black. Thick black.

U.S. observers estimated that the flow was between 2,000 and 4,000 barrels per day and possibly as high as 100,000 barrels per day.

The spill was set on fire in an effort to minimise environmental damage, and about 2,000 bbl of oil per day were skimmed from the surface by recovery vessels, and the help of 500 men.

Efforts to stop the flow were unsuccessful, simply because the available technology - close at hand in the U.S. - was not good enough to deal with it.

Oil poured from the well for ten months - even in late January, 8,000 barrels of light crude were still gushing into the Gulf daily. A long thick slick spread steadily.

To quote the New Scientist of 24 Jan., 1980.

*In its early life, the fresh slick thus evolved into two components: the "glob" with an average thickness of several millimetres, and the film whose thickness is of the order of thousandths of a millimetre. While the glob contained about 90 per cent of the oil, the film occupied a much greater area, and invariably the glob travelled downward faster than the film.*

Various fractions of the oil evaporated at different rates.

*As evaporation and dissolution increased, the spreading decreased and the individual globs contracted, flattened and thickened into "pancakes" ranging from 1 to 10 metres in diameter in calm seas, pancakes can remain stable for a few weeks, losing oil gradually in the form of floating tar balls and sometimes in the form of small heavy flakes which drop to the sea.*

*By the 1st of August, the oil slick had split into several segments each up to 110 km long, spread over 600 kilometres...* Most of the slick was moving northward, carried by the seasonal Texas coastal current. Once it had weathered, portions of the slick would sink, moving along with the current as deep as 12 metres below the surface.

*When the oil first hit Texan beaches, it had been highly weathered and came in as an army of tar balls. On a few beaches there were tar mats, long sand and slick mixtures that had been pounded together and flattened by the surf. Some of the largest tar mats were 100 metres long by 8 metres wide.*

*Once the oil enters the sediments, its rate of change slows. There are sediments in Chedabucto Bay, Nova Scotia, for instance, which still contain oil from a 1970 spill; normally it can take 25 years or more to completely flush oil out of certain coastal sediments.*

Despite the fact that the disaster happened in a very accessible part of the tropics close to the most modern technological aid, nothing had been able to stop the flow for over ten months. Millions of barrels of oil have polluted the Gulf of Mexico and spoiled beaches along the Texan and Mexican coast. If such an accident occurred off Antarctica, it would be much more difficult still to control.

Because of conditions there - the windiest, coldest place on earth - steel structures would be more likely to suffer from brittle fracture in steel pipes in the ice. One excuse for the disaster in the Gulf of Mexico was that they had struck the biggest well ever, with pressures over 4000 lbs per sq. inch. It is not unforeseeable, then, that pressures of this magnitude if not greater may be encountered in wells discovered off Antarctica.

To make the situation even more disastrous, bio-degradation of oil spills will probably be terribly slow. In Arctic Canada bacterial breakdown of oil is generally slow, there is at one to ten per cent of the rate in temperate zones, and the same could well be true in Antarctica. However oil-degrading bacteria may not occur naturally there as they do in the Arctic and if they do occur, they may be much less common than in the Arctic. Where oil is frozen into sea ice very long delays could occur.

Because the biggest oil blow-out before the Bay of Campeche disaster was of the order of only 12,000 tons and Campeche was probably between one and three million tons, everything previously written about the dangers of oil blow-outs in Antarctic waters becomes irrelevant.

It is imperative that we take heed of the warning given by the Bay of Campeche disaster now, while there is still time. If oil drilling is permitted in Antarctica and a spill results, we could be witness to a very great ecological tragedy.

ECO

Volume XVI
Number 3
May 16, 1980
Canberra, Australia.

ECO is an occasional newspaper published by Friends of the Earth and others at international meetings of environmental importance.

Volume XVI is a joint project of FOE the Greenpeace Foundation and ASOC. Material is copyright 1980 by Friends of the Earth. Editorial office is room 203, Manuka Motor Inn, Canberra Ave, Canberra, ACT 2601 (062)950481. Telex A61630. Contact also through the Canberra Environment Centre.